

CLAIMS

The present listing replaces all previous listings.

1. (Currently Amended) A method of making a disposable article comprising:
incorporating a humidity responsive material having ~~an amount of locked-in~~
~~shape deformation~~ shape memory into the disposable article; and
activating the humidity responsive material by subjecting the disposable article to
a humid environment[.];

wherein the humidity responsive material comprises at least one shape
deformable matrix material comprising an elastomeric polymer and a non-elastomeric
polymer; and

wherein the humidity responsive material is capable of being deformed in at least
one spatial dimension when exposed to one or more external forces, is capable of
maintaining a degree of deformation in at least one spatial dimension once the external
force is removed, and is capable of exhibiting a change, or percent recovery, in at least
one spatial dimension when subjected to a humid environment.

~~2.~~ (Original) The method of claim 1, wherein the humidity responsive material is
activated by exposing the humidity responsive material to a humid environment having
a relative humidity of at least 50%.

~~3.~~ (Original) The method of claim 2, wherein the humid environment has a
relative humidity of at least 75%.

~~4.~~ (Original) The method of claim 2, wherein the humid environment has a
relative humidity of at least 85%.

~~5.~~ (Cancelled)

5 ~~6.~~ (Original) The method of claim ~~5~~¹, wherein the locked-in shape deformation is
created by stretching the humidity responsive material.

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6~~7~~ (Original) The method of claim ~~6~~⁵, wherein the stretched material possesses a draw or stretch ratio of at least 1.5 in one or more directions.

7~~8~~ (Original) The method of claim ~~8~~⁵, wherein the stretched material possesses a draw or stretch ratio in one or more directions of from about 2 to about 10.

8~~9~~ (Original) The method of claim 1, wherein the humidity responsive material comprises a multi-layer or micro-layer structure having separate layers of an elastomeric polymer and a non-elastomeric polymer.

9~~10~~ (Original) The method of claim 1, wherein the humidity responsive material comprises a blend of an elastomeric polymer and a non-elastomeric polymer.

10~~11~~ (Original) The method of claim ~~10~~⁹, wherein the non-elastomeric polymer is a moisture absorbing polymer, and wherein the moisture absorbing polymer exhibits at least a 20% reduction in modulus when the material is exposed to a humid environment.

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11~~12~~ (Original) The method of claim ~~11~~¹⁰, wherein the moisture absorbing polymer exhibits at least a 30% reduction in modulus when the material is exposed to a humid environment.

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12~~13~~ (Original) The method of claim ~~11~~¹⁰, wherein the moisture absorbing polymer exhibits at least a 50% reduction in modulus when the material is exposed to a humid environment.

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13~~14~~ (Original) The method of claim ~~11~~¹⁰, wherein the elastomeric polymer comprises thermoplastic polyurethane, poly(ether-amide) block copolymer, thermoplastic rubber, styrene-butadiene copolymer, silicon rubber, synthetic rubber, styrene isoprene copolymer, styrene ethylene butylene copolymer, butyl rubber, nylon copolymer, spandex fibers comprising segmented polyurethane, ethylene-vinyl acetate copolymer or mixtures thereof.

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14 ~~15~~. (Original) The method of claim ~~11~~, wherein the moisture absorbing material comprises polyethylene oxide, polyethylene glycol, polyvinyl alcohol, polyvinyl pyrrolidone, polyvinyl pyridine, or mixtures thereof.

16. (Cancelled)

17. (Cancelled)

15 ~~18~~. (Currently Amended) The method of claim ~~46~~ 1, wherein the shape deformable matrix material comprises polyester-based thermoplastic polyurethane; polyether-based polyurethane; polyethylene oxide; poly(ether ester) block copolymer; polyamide; poly(amide ester); poly(ether amide) copolymer; polyvinyl alcohol; polyvinyl pyrrolidone; polyvinyl pyridine; polyacrylic acid; polymethacrylic acid; polyaspartic acid; maleic anhydride methylvinyl ether copolymers of varying degrees of hydrolysis; polyvinyl methyl ether copolymers of polyacrylic acid and polyacrylic esters; segmented block copolymer having one or more hard segments and one or more soft segments; or mixtures thereof.

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16 ~~19~~. (Original) The method of claim ~~18~~, wherein the shape deformable matrix material comprises a segmented block copolymer comprising one or more hard segments and one or more soft segments, and wherein either the soft segment, the hard segment, or both contain functional groups or receptor sites that are responsive to humidity.

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17 ~~20~~. (Original) The method of claim ~~19~~, wherein the functional groups are selected from the group consisting of urea, amide, nitro, nitrile, ester, ether, hydroxyl, ethylene oxide, amine groups, carboxylic acid salts, sulfonic acid salts, ionic groups, and receptor sites having an unbalanced charge distribution formed from one or more of the above groups.

- 18 21. (Original) The method of claim ~~46~~¹⁵, wherein the shape deformable matrix material comprises a segmented block copolymer comprising an elastomer.
- 19 22. (Original) The method of claim ~~21~~¹⁸, wherein the elastomer is selected from the group consisting of polyurethane elastomers, polyether elastomers, poly(ether amide) elastomers, polyether polyester elastomers, polyamide-based elastomers, thermoplastic polyurethanes, poly(ether-amide) block copolymers, thermoplastic rubbers, styrene-butadiene copolymers, silicon rubbers, synthetic rubbers, butyl rubber, ethylene-vinyl acetate copolymer, styrene isoprene copolymers, styrene ethylene butylene copolymers and mixtures thereof.
- 20 23. (Original) The method of claim ~~22~~¹⁹, wherein the elastomer is selected from the group consisting of polyurethane elastomers and poly(ether amide) elastomers.
- 21 24. (Currently Amended) The method of claim ~~46~~¹, wherein the humidity responsive material comprises a non-activatable additional material.
- 22 25. (Original) The method of claim ~~24~~²¹, wherein the non-activatable material is selected from the group consisting of non-elastomeric polymers, tackifiers, anti-blocking agents, fillers, antioxidants, UV stabilizers, polyolefin-based polymers and mixtures thereof.
- 23 26. (Original) The method of claim ~~24~~²¹, wherein the humidity responsive material comprises from about 40 to about 99.5 weight percent of shape deformable polymer and from about 60 to about weight percent of additional non-activatable material.
- 24 27. (Original) The method of claim ~~24~~²¹, wherein the humidity responsive material comprises from about 60 to about 99.5 weight percent of shape deformable polymer and from about 40 to about 0.5 weight percent of additional material.

25 ~~28~~ (Original) ²¹ The method of claim ~~24~~, wherein the humidity responsive material comprises from about 80 to about 99.5 weight percent of shape deformable polymer and from about 20 to about 0.5 weight percent of additional non-activatable material.

26 ~~29~~ (Original) The method of claim 1, wherein the disposable article is selected from the group consisting of diapers, training pants, adult incontinence products, feminine care products, sanitary napkins, tampons, health care products, wound dressings, surgical drapes, and surgical gowns.

27 ~~30~~ (Currently Amended) The method of claim ~~4~~ 2, wherein the humidity responsive material exhibits a temperature change of less than about 15°C. when subjected to a humid environment.

28 ~~31~~ (Currently Amended) The method of claim ~~4~~ 2, wherein the humidity responsive material exhibits a temperature change of less than about 12°C. when subjected to a humid environment.

29 ~~32~~ (New) ²⁷ The method of claim ~~30~~, wherein the percent recovery is greater than about 60% when subjected to a humid environment.